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Microalgae as source of biofuel: Technology and prospective

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Abstract

© Published under licence by IOP Publishing Ltd. Microalgae are autotrophic organisms found in solitary cells or in groups of single cells connected together. Their natural environment are typically freshwater and marine systems. Microalgae produce, via photosynthesis, approximately one-half of oxygen generated on earth while simultaneously consume carbon dioxide (CO 2). Among the technologies being examined to produce green fuels (e.g. biodiesel, bioethanol and syngas), microalgae are viewed by many in the scientific community as having the greatest potential to become economically viable fuels. Nevertheless, to reach economic parity with fossil fuels there are still several challenges to be tackle. These include improving harvesting and oil extraction processes as well as increasing biomass productivity and oil content. All of these challenges can be impacted by genetic, molecular, and ultimately synthetic biology techniques.

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